DOCUMENT RESUME

ED 308 062 RC 017 162

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TITLE What Is the Effect of Small-Scale Schooling on Student Achievement? ERIC Digest.
INSTITUTION ERIC Clearinghouse on Rural Education and Small Schools, Charleston, WV.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO EDO-RC-89-6
PUB DATE May 89
CONTRACT RI-88-062016
NOTE 3p.
AVAILABLE FROM ERIC Clearinghouse on Rural Education and Small Schools, Appalachia Educational Laboratory, Inc., P.O. Box 1348, Charleston, WV 25325 (free).
PUB TYPE Information Analyses - ERIC Information Analysis Products (071) -- Reports - General (140)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Elementary Secondary Education; Performance Factors; Rural Schools; *School District Size; *School Effectiveness; *School Size; *Small Schools; Socioeconomic Status
IDENTIFIERS ERIC Digests; *Small School Districts

ABSTRACT

This digest reviews recent evidence of the positive effects of small-scale schooling on student achievement. Historically, larger school size has been viewed as an important educational reform producing cost-effectiveness and educational efficiency. Today, small-scale schooling is found primarily in rural areas and small towns. A 1964 study concluded that small high schools offer students greater opportunities to participate in extracurricular activities and exercise leadership roles. A literature study on the subject from 1924 to 1974 showed most investigators focusing on input variables and recommending increases in school size. However, studies that examined student achievement did not recommend increases in school size. More recently, researchers have turned their attention to outcome variables, such as student achievement, and process variables, such as school climate and instructional leadership. When these studies control for socioeconomic status (SES), they tend to confirm a positive effect of small-scale schooling on student achievement. A 1988 study reports that large school and district size negatively affects student achievement in low SES areas, but positively affects it in high SES areas. Unanswered questions, however, include the use of state data, self-report studies, and other methodological considerations. It is concluded that further research can clarify the ways in which small-scale organization enhances the learning of some students, particularly those from low-SES communities. This digest contains 10 references. (DHP)

ED308062

ERIC DIGEST

Clearinghouse on Rural Education and Small Schools May 1989

What Is The Effect of Small-Scale Schooling on Student Achievement?

Digest EDO-RC-89-6

NEW STUDIES SUGGEST that small-scale schooling can have a positive influence on student achievement. This Digest reviews the recent evidence. The discussion should be of particular interest to policymakers and practitioners who confront the related issues of declining enrollments and school consolidation.

What is small-scale schooling?

Small-scale schooling refers to education that takes place in small schools and school districts. Because consolidation and reorganization have been so extensive, most *students* now attend comparatively large schools and districts. Whereas in 1900 there were approximately 160,000 school districts in the U.S., today there are about 16,000 (Guthrie, 1979).

Our society now educates most *students* in large schools and large districts. From the perspective of educational *units*, however, small-scale schooling is still quite common. Across the nation, 31% of public schools enroll fewer than 300 students, and 20% of U.S. public school districts enroll fewer than 2,125 students (Stern & Chandler, 1987, pp. 171, 180). In other developed countries, however, students *typically* attend small schools and districts (for example, in Scotland and in France).

Why is small scale-schooling a traditional concern of educators?

Throughout the century, educators and policymakers believed that larger school size was an important educational reform. They believed that larger units were more cost-effective and more educationally efficient. Teachers could specialize in larger units, and schools could offer a broader course of studies. Today small-scale schooling is a notable feature of education primarily in rural areas and in small towns. In these areas, factors such as sparsity and a strong sense of local control have frustrated consolidation and reorganization to some extent.

Barker and Gump (1964), however, concerned with the possible advantages of small-scale schooling, conducted an exhaustive study of a sample of small high schools in Kansas. They concluded that small high schools offered students greater opportunities to participate in extracurricular activities and to exercise leadership roles. Although this study did not enjoy wide influence at the time, it did serve to keep interest in small-scale schooling alive during a time when educational thinking viewed small scale as a disadvantage.

During the urban crises of the late 1960s, some educators began to question the wisdom of large-scale schooling in general. Certainly most educators were concerned by the poor performance, particularly the poor academic performance, of students in large urban schools and districts.

Since the late 1960s, researchers have turned their attention to the possible *academic* benefits—in addition to the affective benefits documented by Barker and Gump (1964)—of small-scale schooling. Do such benefits exist? How can observed effects, whatever they are, be described? How large are they? What causes them? What kinds of students might benefit from small-scale schooling? Research has begun to answer some of these questions.

Older studies of small-scale schooling and achievement

In order to understand the focus of recent research, one needs to know a little about older studies of small-scale schooling. Stemnock (1974) reviewed the literature on school size from 1924 to 1974. Of nearly 120 studies, a large majority focused on what are now known as "input variables"— staff specialization and credentials, costs, teaching styles, and course offerings. These are precisely the features of schooling that educators had traditionally thought would improve the quality of students' experience in large schools. In this period, studies that focused on curriculum overwhelmingly called for increases in school size. Studies that focused on other input variables generally reached the same conclusion (Stemnock, 1974).

A small minority of studies in this period, however, also considered the effect of school size on student achievement. Most research conducted between 1924 and the 1960s found little, if any, difference in the achievement of students in small as compared to large schools (Stemnock, 1974). In contrast to the studies that examined input variables, most studies that looked at achievement *did not* recommend increases in school size.

More recent studies of small-scale schooling and achievement

Beginning in the mid-1960s, concern for disadvantaged students shifted the attention of researchers and policymakers from input to *outcome* variables (such as student achievement). Other research begun about this time indicated that *process* variables such as "school climate" and "instructional leadership" could influence student achievement. More recently still, researchers have asked if good school climate and instructional leadership would be easier to achieve in small-scale schooling than in large-scale schooling (for example, Friedkin & Necochea, 1988).

Among the more recent studies, some have used statistical techniques that isolate the unique contribution of school or district size to student achievement. These studies are important because, in contrast to older studies, they take into account the effect of socioeconomic status (SES). Controlling for SES is important because poverty is known to have a depressing effect on student achievement, and the poverty rate of rural areas is generally high (O'Hare, 1988).

When studies include influential SES variables, they tend to

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confirm a *positive* effect of small-scale schooling on the achievement of students (for example, Eberts, Kehoe, & Stone, 1984; Giesbrecht, 1978; Walberg & Fowler, 1987). Recent studies that do not control very well for the influence of SES, however, tend to find—as did older research—*no difference* in the achievement of students in large-scale and small-scale operations (for example, Melnick, Shibles, & Gable, 1987). These results indicate the importance of including influential SES variables in studies of the effects of small-scale schooling on student achievement.

Other recent studies have considered process variables—for example, school climate and instructional leadership—as they influence student achievement in small-scale and large-scale schooling. These studies suggest that variables influence student achievement in different ways in small- and large-scale schooling (see Stockard & Mayberry, 1986 for a review of the literature about such influences).

An important recent study (Friedkin & Necochea, 1988) predicted that school size and district size would *interact* with SES to explain the relationship of organizational scale and student achievement. Their hypothesis was simple. They hypothesized that, in low-SES schools and districts, large size would *negatively* affect student achievement, whereas in high-SES schools and districts it would *positively* affect student achievement. Their research confirmed the prediction.

Moreover, Friedkin and Necochea found a strong negative effect of large size in low-SES schools and districts, but a much smaller positive effect of large size in high-SES schools and districts. These findings suggest that small-scale schooling might be a productive strategy in the education of disadvantaged students, and that the benefits of large-scale schooling are more limited than previously imagined.

Unanswered Questions

Recent studies of the effects of small-scale schooling on student achievement confirm that there is no systematic overall negative effect of small-scale organization on student achievement. This result seems to hold whether the unit of analysis is individual students, schools, or school districts.

Mounting evidence also suggests that small schools and districts may generally produce superior results, once the effects of SES are acknowledged. An important corollary of this general observation may be that in low-SES areas small-scale schooling cultivates students' academic learning better than large-scale schooling.

There are many unanswered questions, however. For example, researchers have generally used state data, rather than national data, in their analyses. States vary in the way they govern, organize, fund, and administer their schools and districts. No one knows how such differences might influence student achievement. Barker and Muse (1985) conducted a nationwide survey which suggests that very small schools produce very good results in general, but that study is based on the self-reported impressions of district superintendents.

Other unanswered questions concern method and object of study. Although studies of achievement continue to offer a serious assessment of what students learn and what schools accomplish, they do not give a complete picture. In particular, they develop norms that may obscure the way small-scale schooling produces its effects. Some of the studies cited here suggest that small-scale schooling influences students' learning differently from large-scale schooling (for example, Eberts et al., 1984; Stockard & Mayberry, 1986). In the future perhaps studies of school effects, and of the ethnography and sociology of small-scale schooling may address some of these unanswered questions.

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This publication was prepared with funding from the U.S. Department of Education, Office of Educational Research and Improvement, under contract no. RI-88-062016. The opinions expressed herein do not necessarily reflect the positions or policies of the Office of Educational Research and Improvement or the Department of Education.

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